

WHAT IS CLAIMED IS:

1. A cellular mobile communication system comprising a plurality of sub-mobile communication systems for configuring a plurality of sub-PLMNs (Public Land Mobile Networks) that are classified by an MSC (Mobile Switching Center), each sub-mobile communication system including:

an MSC for storing system ID information of peripheral sub-PLMNs whose roaming services can be provided according to a geometric location and a convention, identifying a current location of an MS (Mobile Station), configuring a valid roaming list including system IDs of peripheral sub-PLMNs whose roaming services can be provided according to the current location of the MS, and transmitting the valid roaming list; and

a plurality of MSs for storing a roaming list including system IDs of sub-PLMNs whose roaming services can be provided according to the convention, comparing the received valid roaming list and the stored roaming list, scanning a peripheral sub-PLMN after a predetermined period of time if a sub-PLMN having a higher-order priority than a sub-PLMN currently providing a radio service exists in at least one sub-PLMN contained in the valid roaming list, and performing a roaming procedure for the sub-PLMN of the higher-order priority.

2. The cellular mobile communication system as set forth in claim 1, wherein the MSC transmits the valid roaming list at a location registration of the MS.

3. The cellular mobile communication system as set forth in claim 1, wherein the MSC transmits the valid loaming list to the mobile station through a BCCH (Broadcasting channel).

4. A cellular mobile communication system comprising a plurality of sub-mobile communication systems for configuring a plurality of sub-PLMNs (Public Land Mobile Networks) that are classified by an MSC (Mobile Switching Center), each sub-mobile communication system including:

5 a plurality of BTSs (Base Transceiver Stations) for storing system ID information of peripheral sub-PLMNs whose roaming services can be provided according to a geometric location and a convention, and transmitting a valid roaming list at the time of system information transmission; and

a plurality of MSs (Mobile Stations) for storing a roaming list including
10 system IDs of sub-PLMNs whose roaming services can be provided according to the convention, comparing the received valid roaming list and the stored roaming list, scanning a peripheral sub-PLMN after a predetermined period of time if a sub-PLMN having a higher-order priority than a sub-PLMN currently providing a radio service exists in at least one sub-PLMN contained in the valid roaming list,
15 and performing a roaming procedure for the sub-PLMN of the higher-order priority.

5. A method for providing a roaming service in a cellular mobile communication system including a plurality of sub-mobile communication systems for configuring a plurality of sub-PLMNs (Public Land Mobile Networks)
20 that are classified by an MSC (Mobile Switching Center), comprising the steps of:

a) storing system ID information of peripheral sub-PLMNs whose roaming services can be provided according to a geometric location and a convention, in an MSC;

5 b) identifying a current location of an MS (Mobile Station), configuring a valid roaming list including system IDs of peripheral sub-PLMNs whose roaming services can be provided according to a current location of the MS, and transmitting the valid roaming list, in the MSC;

c) comparing the received valid roaming list with a roaming list including system IDs of sub-PLMNs whose roaming services can be provided and roaming
10 priorities, in the MS; and

d) scanning a peripheral sub-PLMN after a predetermined period of time if a sub-PLMN a having higher-order priority than a sub-PLMN currently providing a radio service exists in at least one sub-PLMN contained in the valid roaming list as a result of the comparison, and perform a roaming procedure for the sub-PLMN
15 of the higher-order priority, in the MS.

6. The method as set forth in claim 5, wherein the MSC transmits the valid roaming list when the MS requests a location registration update.

7. A method for providing a roaming service in a cellular mobile communication system including a plurality of sub-mobile communication
20 systems for configuring a plurality of sub-PLMNs (Public Land Mobile Networks) that are classified by an MSC (Mobile Switching Center), comprising the steps of:

a) storing system ID information of peripheral sub-PLMNs whose roaming services can be provided according to a geometric location and a convention, in an MSC;

b) transmitting a location registration update request to the MSC, from an MS (Mobile Station);

c) if the MSC receives the location registration update request, configuring a valid roaming list including system IDs of peripheral sub-PLMNs whose roaming services can be provided according to a current location of the MS, and
5 transmitting the valid roaming list;

d) comparing the received valid roaming list with a roaming list made up of system IDs of sub-PLMNs whose roaming services can be provided and roaming priorities, in the MS; and

10 e) scanning a peripheral sub-PLMN after a predetermined period of time if a sub-PLMN having a higher-order priority than a sub-PLMN currently providing a radio service exists in at least one sub-PLMN contained in the valid roaming list as a result of the comparison, and perform a roaming procedure for the sub-PLMN of the higher-order priority, in the MS.

15 8. A method for providing a roaming service in a cellular mobile communication system including a plurality of sub-mobile communication systems for configuring a plurality of sub-PLMNs (Public Land Mobile Networks) that are classified by an MSC (Mobile Switching Center), comprising the steps of:

a) storing system ID information of peripheral sub-PLMNs whose roaming
20 services can be provided according to a geometric location and a convention, and transmitting a valid roaming list at a system information transmission, in an MSC;

b) comparing the received valid roaming list with a roaming list including system IDs of sub-PLMNs whose roaming services can be provided and roaming priorities according to the convention, in an MS (Mobile Station); and

- c) scanning a peripheral sub-PLMN after a predetermined period of time if a sub-PLMN having a higher-order priority than a sub-PLMN currently providing a radio service exists in at least one sub-PLMN contained in the valid roaming list, and performing a roaming procedure for the sub-PLMN of the higher-order
- 5 priority, in the MS.